



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

Lead in Drinking Water

Information for Consumers

Office of Water Quality

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Introduction: Public water systems are required to monitor for lead in drinking water they distribute to consumers and take corrective action where levels exceed a federal action level of 15 parts per billion. At the same time, consumers can take precautions at home to reduce their chance of exposure to unsafe levels of lead in their tap water. The Indiana Department of Environmental Management's (IDEM's) Office of Water Quality oversees public water systems in Indiana, to ensure compliance with all federal Safe Drinking Water Act requirements. This IDEM fact sheet contains information about the sources of lead in drinking water and health effects associated with lead exposure, requirements for utilities, and actions consumers can take to minimize exposure.



Sources of lead in drinking water: When lead and copper are found in tap water, it is typically due to leaching from internal plumbing materials. If the water is too corrosive, it can cause lead or copper to leach out of the plumbing materials and enter the drinking water. The potential for leaching increases, the longer the water is in contact with the plumbing components. Over the past three decades, exposure to lead in tap water has been greatly reduced. The 1986 and 1996 amendments to the Safe Drinking Water Act (www.epa.gov/dwreginfo/drinking-water-regulatory-information) and the U.S. Environmental Protection Agency's (U.S. EPA's) Lead and Copper Rule in 1991 have also led to the reduction of lead in tap water. Enhanced implementation in the areas of monitoring, treatment, customer awareness, and lead service line replacement are the result of updates to the Lead and Copper Rule in 2000, 2004 and 2007.

Requirements for drinking water utilities: The Lead and Copper Rule serves to protect public health by minimizing the corrosivity of the water to premise plumbing, and therefore, the amount of lead and copper in water supplied by public water systems. Because lead and copper in drinking water are primarily due to the corrosion of distribution pipes and household plumbing materials, the utility collects tap water samples at kitchen or bathroom cold water taps that are frequently used for consumption. This sampling criterion helps ensure residents are consuming safe drinking water. Rather than maximum contaminant levels (MCLs), which are used in the regulation of many contaminants, action levels are used for lead and copper. For lead, water samples are compared to an action level of 15 parts per billion and, if more than 10 percent show lead concentrations exceeding that level, the utility must notify customers and take these additional actions:

- Collect additional water samples to check the water for minerals, alkalinity, calcium, pH and other factors that contribute to corrosivity;
- Take steps to treat the water so that corrosion is reduced;
- Educate the public about lead in drinking water and actions consumers can take to reduce their exposure to lead; and,
- Replace portions of lead service lines (lines that connect distribution mains to customers) that are under the water system's control.

Mobile home parks, subdivisions, hospitals, correctional facilities, schools, factories, office buildings and day care centers must also sample for lead and take protective measures, where the lead action level is exceeded.

Health effects of lead: High levels of lead in tap water can cause health effects if the lead in the water enters the bloodstream and causes an elevated blood lead level. Short-term health effects include interference with red blood cell chemistry; delays in normal physical and mental development in babies and young children; slight deficits in attention span, hearing, and learning abilities of children; and slight increases in the blood pressure of some adults.

Long-term health effects can include stroke, kidney disease, and cancer. Risk will vary, depending on the individual, the circumstances, and the amount of water consumed.

Pregnant women and children six years old and under are most at risk because this is when a child's brain is developing. Even at low levels, lead exposure may cause a range of health effects including behavioral problems and learning disabilities. And while the primary source of lead exposure for most children is lead-based paint in older homes, it is important to note that lead in drinking water can add to that exposure. Infants who drink formula prepared with lead-contaminated water may be at a higher risk because of the large volume of water they consume relative to their body size.

What citizens can do:

- Consumers can ask their water provider about drinking water quality. Reports are also available online. For information, visit IDEM's Safe Drinking Water Watch at <https://myweb.in.gov/IDEM/DWWW/>.
- Individuals on private wells can have their water tested by a certified drinking water laboratory: the Indiana State Department of Health provides a list at www.IN.gov/isdh/22452.htm.
- All consumers should use only water from the cold-water tap for drinking, cooking, and making baby formula. Where pipes are a potential source of lead, flush the tap for one to two minutes before using the water. Hot water is likely to contain higher levels, and boiling this water will NOT reduce the amount of lead in the water.
- If your water has lead at levels exceeding U.S. EPA's action level of 15 parts per billion:
 - Determine whether the service pipe (pipe from the main to your home) is a source and, if so, what the utility is doing to address it.
 - Determine whether pipes in your home are a source and explore what can be done to solve the problem.
 - Remember that the more time water has been sitting in your home's pipes, the more lead it may contain. Anytime the water in a particular faucet has not been used for six hours or longer, flush your cold-water pipes by running the water for one to two minutes. Your water utility will inform you if longer flushing times are needed to respond to local conditions. To flush the house water system, run high-volume taps such as the shower or tub valve for five minutes before flushing the kitchen tap.
 - After flushing your pipes, fill pitchers and containers to use for drinking water, cooking, preparation of baby formula, and other consumption.
 - Bathing and showering should be safe for you and your children; however, in cases involving highly corrosive water, additional recommendations or more stringent actions may be recommended. Check with your utility or local health department for recommendations.
 - For homes with children or pregnant women, recommendations may include using bottled water or water from a filtration system that has been certified by an independent testing organization to reduce or eliminate lead. Because most bottled water does not contain fluoride, a fluoride supplement may be necessary in these cases.
- When making repairs to copper pipes, do not use lead solder. Inspect the aerator on the end of the faucet and removing any debris such as metal particles. Test the water after plumbing work in housing with lead water lines or lead solder.



More information:

- For the Lead and Copper Rule (*found in the Indiana Administrative code at 327 IAC 8*), visit IDEM's fact sheet on its website at http://www.in.gov/idem/files/factsheet_owq_pws_lead_copper.pdf and U.S. EPA's website at www.epa.gov/dwreginfo/drinking-water-rule-quick-reference-guides#lcrgrg.
- For Public Water System information, visit Safe Drinking Water Watch at <https://myweb.in.gov/IDEM/DWWW/>.
- Direct questions to IDEM's Drinking Water Branch at (800) 451-6027, ext. 4-7430, or (317) 234-7430.
- For topics on lead and lead poisoning, visit the Indiana State Department of Health's website at www.IN.gov/isdh/26550.htm, U.S. EPA's website at www.epa.gov/lead, and the Centers for Disease Control website at www.cdc.gov/nceh/lead/tips/water.htm.
- For regulations on bottled water, visit the Food and Drug Administration website at www.fda.gov/Food/ResourcesForYou/Consumers/ucm046894.htm. For standards and certification for bottled water, also visit the Public Health and Safety Organization at www.nsf.org and the International Bottled Water Association at www.bottledwater.org/education/labels.